

## DESCRIPTION OF THE COURSES

- Course code: ELR3369
- Course title: BASICS OF MIKROPROCESSOR
- Language of the lecturer: polish

<i>Course form</i>	<i>Lecture</i>	<i>Classes</i>	<i>Laboratory</i>	<i>Project</i>	<i>Seminar</i>
<i>Number of hours/week*</i>	<i>1</i>		<i>2</i>		
<i>Number of hours/semester*</i>	<i>10</i>		<i>20</i>		
<i>Form of the course completion</i>	<i>mark</i>		<i>mark</i>		
<i>ECTS credits</i>	<i>1</i>		<i>2</i>		
<b>Total Student's Workload</b>	<i>90</i>				

- Level of the course (basic/~~advanced~~):
- Prerequisites: basics of electronics,
- Name, first name and degree of the lecturer/supervisor: Grzegorz KOSOBUDZKI, Ph.D
- Names, first names and degrees of the team's members: Krzysztof PODLEJSKI Ph.D
- Year: III Semester: 6.
- Type of the course (obligatory/~~optional~~):
- Aims of the course (effects of the course):
- Form of the teaching (traditional/~~e-learning~~):
- Course description: The basic information about: microprocessor, microcomputer, input/output devices, memory, addressing of memories, the organization of microprocessor's work. The basic of programming, algorithms, list of commands. Description of modular computers and dedicated computers. Examples of applications microprocessor's technique and directions of the progress.
- Lecture:

<i>Particular lectures contents</i>	<i>Number of hours</i>
<ol style="list-style-type: none"> <li>1. The codes, binary-logics, hexadecimal-logics, the base of programming.</li> <li>2. The types of microprocessors and microcomputers, parameters and orders</li> <li>3. The architecture of microprocessor – organization of memory, CPU</li> <li>4. The structure of ports, serial port, cooperation of microprocessor with external devices.</li> <li>5. Timers, methods its applications. System of interruptions.</li> </ol>	

- Classes – the contents:
  - Seminars – the contents:
  - Laboratory – the contents:
- The microprocessor list of instructions.

Programming tasks: transfer of data, rules of arithmetic and logic, service of subprogrammes and interruptions, applications of timers.

The project tasks: Programming of input /output ports and external device (LCD).

Programming of serial port, Programming of analog to digital converter (measurement of electrical value)

- Project – the contents:

- Basic literature:

Biernat J., Metody i układy arytmetyki komputerowej, Wyd. PWr., 2001

Starecki T., Mikrokontrolery jednocukłowe rodziny 51, Nozomi, 1996

Janiczek J., Stepień A., Laboratorium systemów mikroprocesorowych, Wyd. CKP,  
1 9 9 6

Barananowski R. Mikrokontrolery AVR ATtiny w praktyce. Wyd. BTC 2005

Barananowski R. Mikrokontrolery AVR ATmega w praktyce. Wyd. BTC 2005

Pawlaczuk A. Sztuka programowania mikrokontrolerów AVR – podstawy Wyd. BTC  
2006

- Additional literature: papers, internet resources (www of microprocessors producers)
- Conditions of the course acceptance/creditation: The colloquium and realization all laboratory projects

\* - depending on a system of studies